

Values associated with Antarctica: a study of the values reported by first time visitors

Dan Wilson

University of Canterbury PCAS Programme 2010/2011

Name: Dan Wilson

Student ID: 64068947

### Abstract

Based on Schwartz's (1992, 1994) value theory and Suedfeld, Lekaia and Brcic's (2010) use of thematic content analysis (TCA) as a methodology for coding values from interviews, the present study trialled TCA based on Schwartz's value theory as a methodology for extracting topic specific value information from interviews. Participants were 14 students who had all visited Antarctica for the first time through a postgraduate university course. Results suggested that Schwartz's (1992, 1994) value definitions and markers are well suited to topic specific TCA analysis. Observed frequencies of interview value references suggested that the sample strongly associated five of Schwarz's basic values with Antarctica; stimulation, conformity, tradition, stimulation, power and universalism. The content of these five values and their structural relations are presented and discussed. The hierarchy of observed value references in the present sample is presented and discussed in the context of Schwartz and Bardi's (2001) pan-cultural norms. Possible explanations for the apparent lack of importance of benevolence in Antarctica are discussed. Recommendations for future multi-method studies aimed at topic specific value extraction are provided.

### **Values associated with Antarctica: a study of the values reported by first time visitors**

Increasing media coverage has brought information about Antarctica to millions of people around the world, this has brought into question the worth of Antarctica to humankind. As humans we form impressions about Antarctica based on the information we receive, these impressions affect the decisions we make about Antarctica, and the results of these decisions affect not only the future of Antarctica, but also the future of the global climate system. The question then of what we value about Antarctica, is an important one as it is us, human beings, who make decisions about Antarctica and these decisions are in part based on our values. Part of the Scientific Committee on Antarctic Research, the Social Science Action Group (SSAG) has made a commitment to understanding and cataloguing the range of human values imposed on Antarctica (SSAG, 2010). As a contribution towards this huge task, the present paper aims to address the issue of determining the values that people associate with Antarctica from a psychological perspective, drawing upon psychological theory and exploring the potential of the new methodologies required to assist in understanding the values humans associate with Antarctica.

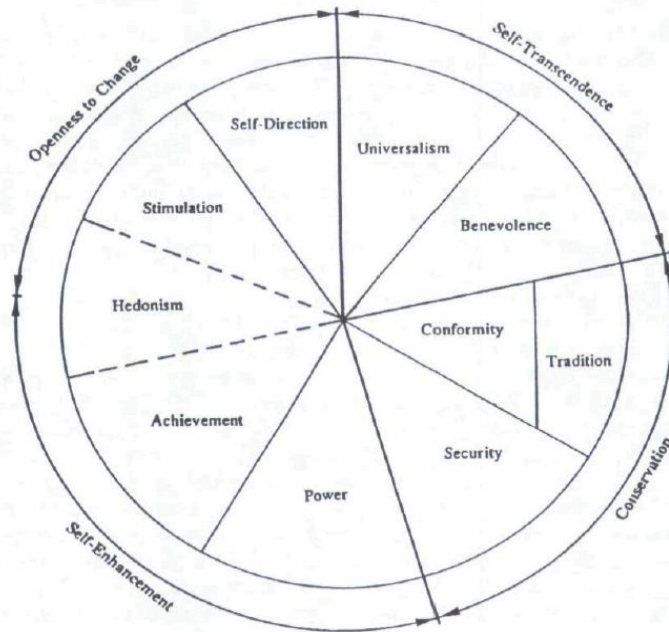
Schwartz's theory of the structure of basic human values is the most widely applied and rigorously tested model of human values available to the social sciences (Seligman, Olson, & Zanna, 1996; Schwartz & Bohnke, 2004). Schwartz (1994) defined values as:

desirable transsituational goals, varying in importance, that serve as guiding principles in the life of a person or other social entity. Implicit in this definition of values as goals is that (1) they serve the interests of some social entity, (2) they can motivate action—giving it direction and emotional intensity, (3) they function as standards for judging and justifying action, and (4) they are acquired both

through socialization to dominant group values and through the unique learning experiences of individuals. (p. 21)

Schwartz (1992, 1994) proposed that groups and individuals express the necessities of human existence (needs of individuals as biological organisms, requisites of coordinated social interaction, and requirements for the smooth functioning and survival of groups) by communicating such requirements cognitively (linguistically) as conscious goals in the form of values. Based on this understanding and using data collected from 97 samples in 44 countries, Schwartz (1992) identified ten motivationally distinct value types that are intended to include all of the basic values recognised by cultures around the world; power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, conformity, tradition and security. An 11<sup>th</sup> basic value, spirituality, was also identified, but was not reliably observable in all samples, so was not deemed to be a universal basic value and consequently excluded from Schwartz's value theory (Schwartz, 1992, 1994). Schwartz (1992, 1994) also identified a number of marker that sit within a given basic value and share the same motivational goal. These marker values can be considered as identifiers of the basic value type in which they sit.

Schwartz's (1992, 1994) value theory proposes that actions expressing a value have consequences that may conflict or concord with the pursuit of other values. Thus, the ten basic values are dynamically related and can be represented in a quasi-circular structure as shown in Figure 1.



*Figure 1.* Schwartz's model of the relations between human values. Reprinted from "Are There Universal Aspects in the Structure and Contents of Human Values?" by S. H. Schwartz, 1994, *Journal of Social Issues*, 50, 19-45, p. 24.

The quasi-circular arrangement of the values represents a motivational continuum; the closer any two values are, the more similar their underlying motivations, and the more distant any two values are, the more conflicting their underlying motivations (Schwartz, 1992, 1994). Tradition and conformity occupy the same section of the circle as they are motivationally similar in that they share the goal of subordinating the self in favour of socially imposed expectations, but differ in that tradition involves subordination to the people one is in frequent contact with, whereas conformity involves subordination to more abstract objects which one subordinates the self.

Schwartz (1992, 1994) proposed that relationships among the ten basic values could be understood in terms of two bipolar higher-order value dimensions. On one dimension openness to change (a combination of stimulation and self-direction) opposes conservation (a combination of security, conformity and tradition). On the other dimension self-enhancement (a

combination of power and achievement) opposes self-transcendence (a combination of universalism and benevolence). Hedonism shares elements of openness to change and self-enhancement so is shared between these two higher order values. It should be noted however that Schwartz (1992, 1994) proposed these higher-order value types merely as one possible way to describe the value structure of the ten basic values more simply. Given that the ten basic values form a motivational continuum, they can also be partitioned in other ways i.e. any group of adjacent values can be combined to form a higher order value as is required (Schwartz & Bohnke, 2004).

A number of tools are available for quantifying value profiles in relation to Schwartz's 10 basic values; Schwartz's Value Survey (SVS) and Schwartz's Short Value Survey (SSVS) both require participants to express numerical judgements of value strength on likert scale (Schwartz, 1992, 1996), whereas the Portrait Values Questionnaire (PVQ) provides a more concrete and contextualised method involving participants making similarity judgements between themselves and given descriptions of people expressing certain values, the PVQ has the advantage of not identifying values as the topic of investigation (Schwartz et al., 2001). The SVS, SVSS and PVQ have been shown to be reliable and valid scales (Lindeman & Verkasalo, 2005). However, all provide tools for measuring an individual's complete value profile (i.e. the full range of values that a person holds), rather than measuring values associated with a specific topic (e.g. values associated with Antarctica) as in the present study.

Recently Suedfeld, Lekaia and Brcic (2010) employed thematic content analysis (TCA) to code value references to Schwartz's basic values in order to provide complete value profiles from text and oral sources. TCA is a general methodology for coding/scoring verbal and written material in order to identify particular characteristics of a message (see Smith, 1992 for an

overview on the topic). Suedfeld, Lekaia and Brcic (2010) developed a TCA coding system based on Schwartz's value definitions in order to code autobiographies, interviews and oral histories of astronauts. Using this system they were able to create complete value profiles<sup>1</sup> for astronauts before and after space flights, allowing them to assess the change in values associated with this event. Their study confirms the use of TCA as a methodology for coding Schwartz's basic values from interviews. Based on this finding and Schwartz's proposition that values are expressed linguistically within conversation (Schwartz, 1992, 1994), the present study proposes to quantify references to Schwartz's ten basic values using TCA. By conducting topic specific interviews about Antarctica it is proposed that the resulting coded values will reflect the values that participants associate with Antarctica.

Because of the exploratory nature of the present study no hypotheses are proposed. Rather, this study is intended to trial a methodology for analysing content specific information for Schwartz's ten basic values using TCA. It is also intended to provide some contribution towards SAGGs goal of attaining a better understanding of values associated with Antarctica.

## **Method**

### **Participants**

Participants were 14 postgraduate university students participating in a multi-disciplinary Antarctic studies course at Canterbury University. Eight of the participants were female and the whole sample had an average age of 30.2 years ( $SD=9.90$ ) and an average of 4.9 years ( $SD=1.61$ ) of tertiary education. Of the total 16 students taking part in the course, 2 were excluded from the

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<sup>1</sup> Such value profiles may not be as complete as those created using the SVS. Here 'complete value profile' is used to identify a value profile intended to examine all values held by an individual so as to distinguish it from, the values an individual associates with a particular topic.

study on accounts of one having previously visited the Antarctic, and the other being the author of the present study. All other students accepted the offer to participate in the study.

## **Procedure**

Interviews were conducted over a three day period commencing two weeks after the students' return from Antarctica. All interviews were conducted by the author and recorded with the participant's permission. Interviews were semi-structured and involved asking three open-ended questions: Firstly, tell me about Antarctica. Secondly, given your description, what value does Antarctica have for you? Thirdly, in general, what value does Antarctica have? When answers were unclear to the interviewer, participants were prompted for more information. At the end of each answer participants were asked if there was anything they would like to add. Details of current age and number of years in tertiary education were also collected.

As with Suedfeld, Lekaia and Brcic (2010), the definitions and markers of Schwartz's ten basic values were used as the basis of a template for TCA (see Schwartz, 1994 p. 22 for a listing of full definitions and markers for the ten basic values). Despite spirituality being excluded from Schwartz's model of values, it was considered to be of interest so was included as a basic value (see Schwartz, 1994 p. 23 for a definition of spirituality). Recordings of the interviews were listened to by the author, who scored mentions of each basic value observed. Because of the freeform nature of verbal references to values, no unit of scoring (e.g. paragraph) was used, instead values were scored as thematic groups. For example, if a participant referred to power in terms of competition for resources two times during in an interview, this was scored only once for power, but if a participant referred to power once in terms of competition for resources, and once in terms of countries exercising their dominance in Antarctica, this was scored twice for power. This approach was taken to avoid multiple references to the same theme being scored



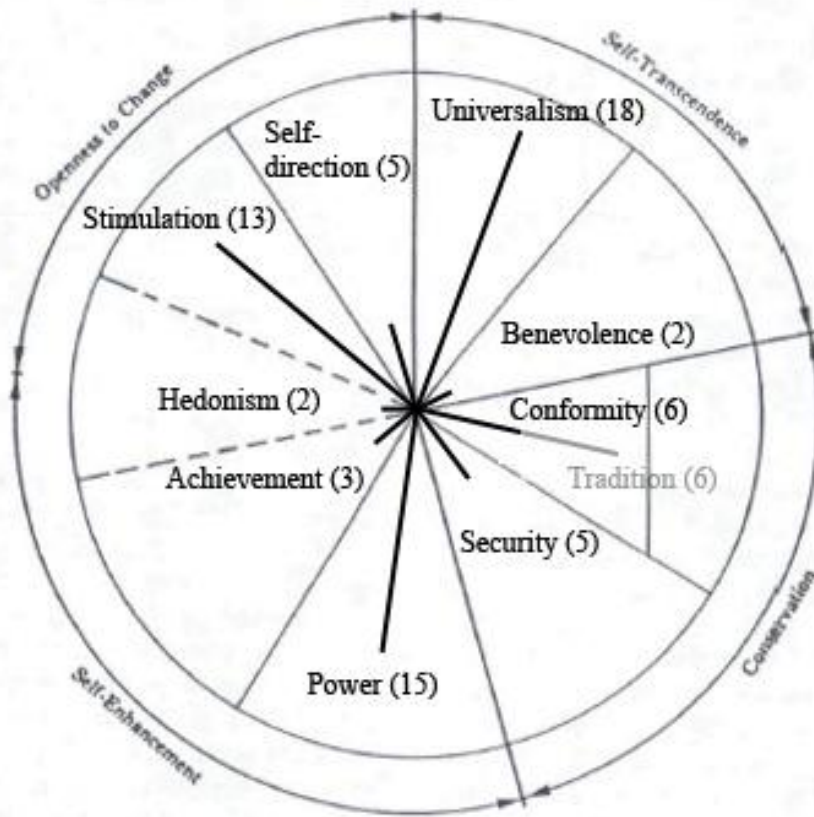
multiple times, and thus making longer interviews likely to yield higher value counts. Each value reference theme was scored under the appropriate basic value and the details of the thematic content of the value were recorded.

## Results

Interviews ranged in length from 10 to 26 minutes with a mean length of 18 minutes 33 seconds ( $M=18:33$ ,  $SD=6:26$ ). The number of value references identified in each interview ranged from 2 to 12 ( $M= 5.42$ ,  $SD=2.66$ ), and these were observed to cover between 2 and 7 value categories ( $M= 4.14$ ,  $SD=1.46$ ). Table 1 shows the mean frequencies of the value references for each of the 11 value categories in comparison to Schwartz & Bardi's (2001) pan-cultural student norms. Total value frequencies for the ten basic values are mapped onto a visual representation of Schwartz's model of the relations between human values in figure 2.

Table 1

<i>Overall Frequency of Value References</i>				
Rank in Participant Hierarchy	Value	Mean	<i>SD</i>	Rank in Pan-Cultural Student Norms
1	Universalism	1.29	0.83	3
2	Power	1.07	1.14	10
3	Stimulation	0.93	0.62	8
4	Hedonism	0.14	0.36	7
5.5	Conformity	0.43	0.51	6
5.5	Tradition	0.43	0.65	9
7.5	Security	0.36	0.63	5
7.5	Self-direction	0.36	0.63	2
9	Achievement	0.21	0.58	4
10	Benevolence	0.14	0.36	1
11	Spirituality	0.07	0.27	Not Ranked



*Figure 2.* Total value frequencies for the ten basic values shown on Schwartz's model of the relations between human values.

In order to assess the intra vs. inter personal nature of the two main opposing values conflicts (power vs. universalism; and tradition/conformity vs. stimulation) data for each participant were collapsed to reflect whether or not the participant referenced each value. Frequencies of collapsed value references for universalism and power are shown in table 3 and for tradition/conformity and stimulation in table 4. Use of fisher's was used to test the probability for the relationship between collapse value frequencies for power vs. universalism ( $P=0.40$ ), and for tradition/conformity vs. stimulation ( $p=0.33$ ), likely as a result of the low statistical power of the present sample, neither result was significant.

Table 2

<i>Frequencies of collapsed value references for universalism and power</i>		
	Power yes	Power no
Universalism yes	7	5
Universalism no	2	0

Table 3

<i>Frequencies of collapsed value references for conformity/tradition and stimulation</i>		
	Stimulation yes	Stimulation no
Tradition/conformity yes	7	3
Tradition/conformity no	4	0

In order to provide an understanding of the types of references that were obtained, table 4 presents the five most frequently observed value categories along with examples of statements that were allocated to that category as well as the definitions and markers used to in the coding process.

Table 4

*Schwartz's value categories, markers and examples from participant interviews*

Value	Definitions and markers	Example quote
Power	Social status and prestige, control or dominance over people and resources (authority, social power, wealth, preservation of public image)	"America doesn't have a slice of the pie, it wasn't one of the original seven parties that laid claims, yet because of its money and the infrastructure that it puts to it, it has actually got quite a big say"
Universalism	Understanding, appreciation, tolerance, and protection for the welfare of all people and for nature (equality, social justice, wisdom, broadminded, protecting the environment, unity with nature, a world of beauty)	"[Antarctica] is the powerhouse for the rest of the world, it regulates the rest of the world in its oceans, in its weather and it's a great place to connect, well the world connects to it, therefore people can connect to it in various ways whether it's the historic, the physical and the political. "
Stimulation	Excitement, novelty, and challenge in life (daring, a varied life, an exciting life)	"the experience [of visiting Antarctica] has been rich and exciting"
Tradition	Respect, commitment, and acceptance of the customs and ideas that traditional culture or religion provide (devout, respect for tradition, humble, moderate)	"[Antarctica] is not nearly as dangerous as it was when the language was laid down, when people often died there and often suffered horrible injuries but there is still that kind of 'Antarctica is a beautiful but deadly kind of place, dangerous'."
Conformity	Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms (self-discipline, politeness, honouring parents and elders)	"As soon as people come in and play with something it can never go back to that natural process again, the natural process, the natural chain of order has changed, so once you have played with [Antarctica] you can't always take it back so you don't want to go and play with the whole lot because then you've lost any true potential that you could have got from leaving it as is."

## **Discussion**

### **Methodological Considerations**

In terms of trialling a new methodology for analysing content specific information for Schwartz's ten basic values, the present study has succeeded in utilising TCA to code topic specific value information from interviews. In general, interview value references mapped onto the coding scheme well; a reasonable number of statements matching Schwartz's definition of values were observed and these were easily allocated into particular value categories using Schwartz's definitions and markers. As with any exploratory study there are a number of limitations that must be considered before making inferences from the results, the main limitations of the present study are discussed here.

Having tested the present methodology in a small scale exploratory study, there is now potential for larger scale extraction of values for varying topics. The present study employed only the author to rate value references as this allowed a fuller understanding to be gained about the intricacies of the chosen approach. The present methodology could be applied as the framework for a more formalised scoring procedure involving multiple raters. Such an approach would allow inter-rater reliability to be tested and thus firm statistical inferences could be drawn from the data.

The multi-disciplinary course from which the study participants were recruited had the advantage of being a demographically diverse group who all shared a similar level of academic interest and knowledge about Antarctica. All participants were also in the unique situation of having little prior experience of working within in the Antarctic community, not being employed by Antarctic organisations, and had all had the opportunity to visit Antarctica. Such a group is well suited to exploratory research as methodologies can be tested on a broad demographic range

without having to make significant provisions for lack of understanding and varying degrees of involvement with Antarctica. However, research on such a unique group severely limits the extent to which results can be generalised. It is expected that future research will be able to utilise the current methodology with larger and more generalisable samples.

The use of a direct questioning interview in the present study may be the source of some biases in the data. In particular, social desirability may have impacted responses as participants were aware that they were being questioned about their values relating to Antarctica. In order to investigate and quantify possible methodological biases in the observed value references, multi method approaches to measuring topic specific values in different ways are required.

Given that the present study is the first of its kind to conduct topic specific value analysis using Schwartz's basic values, there are no baseline measures with which to compare. Instead it is presumed that all values sit on equal interval scales, and that direct frequency comparisons can be made between them. For example it is presumed that four references to universalism represent twice the value strength of two references to achievement. In the absence of evidence to the contrary this assumption seems fair, however further research is required to confirm this understanding. As a result the present study analyses clear differences in value frequencies rather than focusing on the significance of detailed comparability between the frequencies of value references observed.

### **Values Associated with Antarctica**

In terms of contributing to the understanding of values associated with Antarctica, the present study can make several suggestions. Results suggest that for the present sample there were five commonly referenced basic values associated with Antarctica; stimulation, conformity, tradition, stimulation, power and universalism. Interestingly these five commonly referenced

basic values each sit within a distinct quadrant of Schwartz's higher order value types. Thematic analysis of the content of the value references as well as and implications of the inter-relations of value references are discussed below.

### **Universalism vs. power.**

High frequencies of references to universalism and power suggest conflict between these values as they are opposed in Schwartz's structure of human values so are considered to be motivationally dissimilar. References to universalism were mostly in the context of using Antarctica to promote the welfare of all people, protection of the environment and unity with nature. All of these concepts were discussed as being ideals or goals for the wider human engagement with Antarctica, rather than as necessarily being reflections of current activities taking place in Antarctica. On the opposing side of Schwartz's structure of human values, references to power related to wealth as well as control and dominance over people and resources. Given the nature and context of the value references to universalism and power it appears that here they are expressing two sides of the same issue about the human use of Antarctica; with the possibility of Antarctica being used in a collaborative way that promotes harmony among people and unity with nature being expressed by universalism values, and anthropocentric and competitive uses of Antarctica being expressed by power values.

Given the small sample size of the present study it is not possible to conclude whether these opposing values were a reflection of inter-personal value conflicts (i.e. some participants making many references to power but not to universalism, and other participants making many references to universalism but not to power) or intra-personal values conflicts (i.e. the same participant making many references to both universalism and power). Although statistical analysis of the current results did not yield a significant result, a visual assessment of the 2x2

contingency table shown in table 2 suggests that the value conflict between universalism and power is intra-personal. Intra-personal conflict between values can be considered to reflect the complexity of the issue under observation as the conflict represents the operation of strong opposing motivational goals within an individual. However, further research is required to statistically confirm the suggestion that the power and universalism are indeed in conflict and that the nature of this conflict is intra-personal.

### **Stimulation vs. tradition/conformity.**

The other directly oppositional value conflict apparent in the results is the high number of stimulation value references which stand in opposition to the high number of references to conformity and tradition values. Given the close motivational links between tradition and conformity they are considered here together. References to conformity related to the promotion of severe restraint of actions in terms of the human impact on Antarctica. References to tradition related to the respect for and preservation of the tradition in Antarctica, namely that of the heroic era of Antarctic exploration. In line with Schwartz's value theory these conformity and tradition values share the goal of subordinating individual action in favour of socially imposed expectations. In the case of conformity, expectations are imposed by those whom a person is in frequent contact with, however the value references observed in the interviews do not contain enough information to clearly define the people or organisations responsible for this. In the case of tradition, expectations are imposed by more abstract ideas, in this case the notion of heroic era exploration in Antarctica.

In opposition to conformity and tradition in Schwartz's value structure, stimulation references were mostly linked to the excitement and novelty of physical and conceptual engagement with a remote, extreme and exclusive area like Antarctica. It should be noted here



that the participants' recent return from Antarctica at the time of the interviews may have made references to stimulation more accessible and so contributed to the high frequency of stimulation references observed.

When the underlying content of the value categories are considered, this value conflict between stimulation and tradition/conformity appears to reflect the balance between maintaining Antarctica as an area largely free of human impact (conformity) and as an environment that is strongly associated with stories of adventure (tradition),<sup>2</sup> as opposed to the value of modern day exploration and the ability for new individuals to become a part of Antarctica's history (stimulation). As with many remote places, the more people who access Antarctica, the less exclusive it becomes to be one of the visitors.

This conflict is perhaps best understood in terms of the higher order value types proposed by Schwartz (1992, 1994); stimulation sits within the higher order value type of openness to change, and conformity/tradition within conservation. Considered in this context the conflict is simplified to the value of preserving the relatively pristine environment and existing history of Antarctica (conservation), in opposition to the value of an ever evolving and increasingly accessible Antarctica that allows activities in the present to become part of its history (openness to change).

As with universalism and power it is not possible for the present study to conclude whether the conflict between high numbers of stimulation value references and

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<sup>2</sup> These understandings of conformity and tradition can be considered co-dependent, not only because of their shared motivations as defined by Schwartz (1992, 1994), but also because of their thematic content there is a link between the salience of adventurous stories and the total human impact on Antarctica. It is proposed that the larger the human impact on Antarctica, the less apparent and the less meaningful stories of adventure become.

conformity/tradition value references is a reflection of an inter-personal or intra-personal value conflict. A visual assessment of the 2x2 contingency table shown in table 3 would suggest that the value conflict between universalism and power is intra-personal and thus reflect the complexity of the issue under observation as the conflict represents strong intra-personal opposing motivational goals.

In assessing these value conflicts it should not be overlooked that there is also some conflict between non-opposing, semi-adjacent values, for example, conformity/tradition and power. These certainly warrant further investigation and a wider scale repetition of the present study would allow statistical inferences to be made between these. Given the lack of statistical power and exploratory focus of the present study, only directly opposing value conflicts have been considered here.

#### **Current findings in comparison with pan cultural student norms.**

The value hierarchy observed in the present study did not match the pan-cultural student norms reported by Schwartz and Bardi (2001). Given that pan-cultural norms reflect an averaged complete value profile, whereas the present study is measuring only values associated with Antarctica, this discrepancy can be considered an indication that the present methodology is not just measuring the participants' complete value profiles, but rather examining the values they associate with Antarctica. A more rigorous test of this thesis would involve collecting topic specific data as in the present study, then comparing this to the same participants' complete value profiles which could be assessed using SVS.

Although a strong correlation between pan-cultural norms and the present study would not be expected, there is one finding that warrants further discussion; with the exception of spirituality, the value of benevolence was rated as the least important value that participants

associated with Antarctica, whereas it rates as most important value in the pan-cultural norms. The contrast here is of interest as if the value of benevolence is generally of supreme importance in people's lives, why does it appear to be unimportant in association with Antarctica?

One possibility is that although benevolence is generally important to people, in the case of Antarctica it is not considered important enough to be a value that people associate strongly. However, given Schwartz and Bardi's (2001) suggestion that benevolence is of supreme pan-cultural importance because it is a fundamental condition for encouraging desirable behaviours in others, and the high level of international interaction at work in Antarctic, this hypothesis seems unlikely. Another possible explanation is that the sample does value benevolence in Antarctica, but it is not being observed by the present methodology because of its axiomatic nature in the context of Antarctica, and so does not warrant explicit discussion. This issue could be resolved by specifically asking, or in some other way measuring, the importance participants place on the value of benevolence in Antarctica.

### **Recommendations for Future Research**

Repetition of the present methodology with other larger samples is required to extend the findings to other populations and to statistically test the suggestions made here. The present method could be usefully applied to examine differences between groups (e.g. differences between scientists and the general public in terms of the respective values each group associates with Antarctica), and between topics (e.g. the values people associate with Antarctica in comparison to the values they associate with other continents).

There is also a need for multi-method approaches to be developed and applied to topic specific analysis of values, both in Antarctica and in other areas. Existing tools (e.g. SVS, SSVS and PVQ) could be used to compare people's complete value profiles against topic specific value

profiles. Such research would serve to test the scaling and construct validity of the present measurement method as, if measured accurately, a person's topic specific value profile should fall within the bounds of, and exhibit some of the same characteristics as, the same person's complete value profile. There would also be merit in the developing other new measures and methodologies to quantify topic specific values. In particular, measures or methodologies that do not identify values as the topic of investigation (similar to the PVQ but focused on a specific topic) would be of particular value in overcoming the issues associated with interview based content analysis.

### **Conclusion**

The present study has successfully trialled TCA based on Schwartz's value theory as a methodology for extracting topic specific value information from interviews. The use of Schwartz's (1992, 1994) value definitions and markers appear to be well suited to this application. Initial findings suggest that the values of conformity, tradition, stimulation, power and universalism may be strongly associated with Antarctica. Taking into account the structural relations of these values and their content provides a useful understanding of the structure of motivational value conflicts in Antarctica. Further research utilising multi-method approaches is required to confirm and extend the scope of the present findings.

By developing and testing reliable tools and methodologies for the measuring topic specific values it is hoped that we can broaden our understanding of how such values are influenced and how they relate to our actions. Gaining a better understanding of the values associated with Antarctica will provide a blueprint for understanding and managing the future human engagement with similar extreme landscapes such as the sea floor and ultimately moons and other planets.

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